

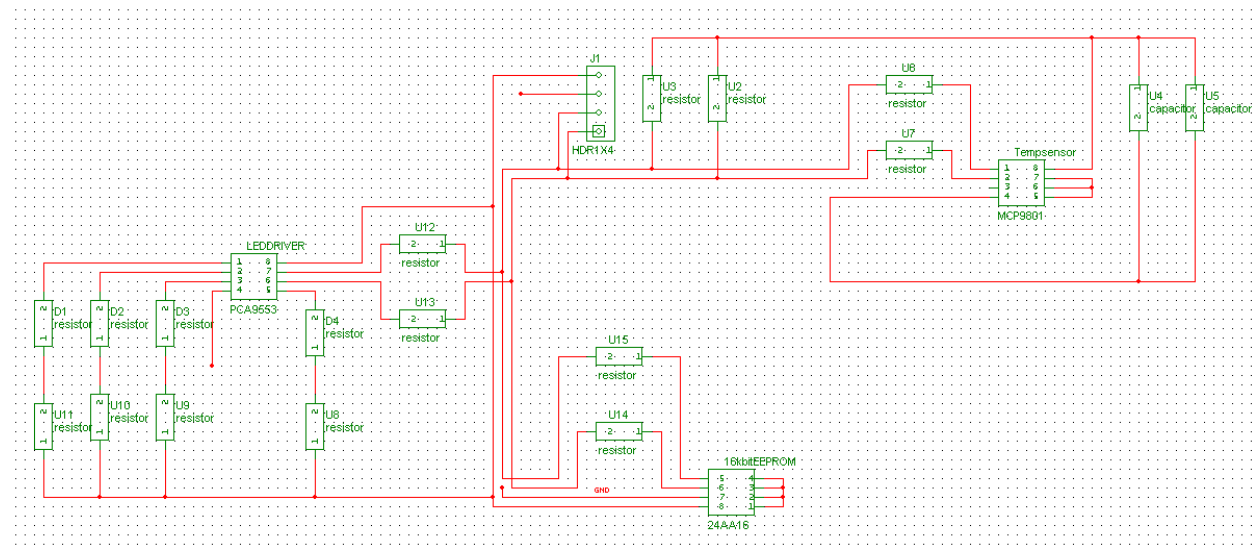
PCB Data Sheet For SD0923 Group

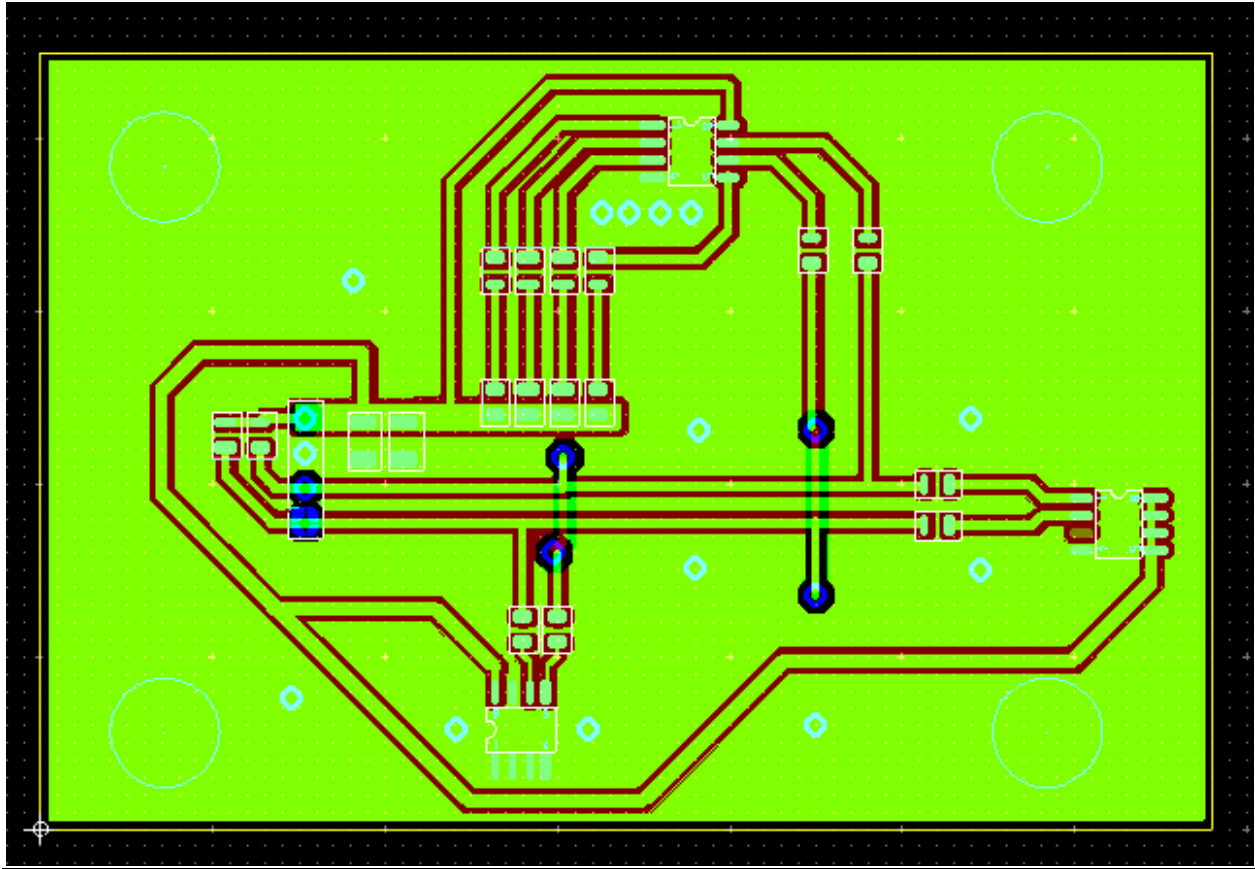
Purpose: The purpose of this board is to demonstrate that the smbus we designed does work and can be used in a real life application. The real life application demonstrated is a temperature sensor that can record the temperature. This would come in handy if you want to record data for a long period of time (1 week).

Material list:

6	0 ohm resistors
2	10k resistors
4	66.5 ohm resistors
4	Green LEDs
2	10 uF capacitors
1	16kbit EEPROM
1	LED Driver
1	Temperature sensor

Circuit Diagram:

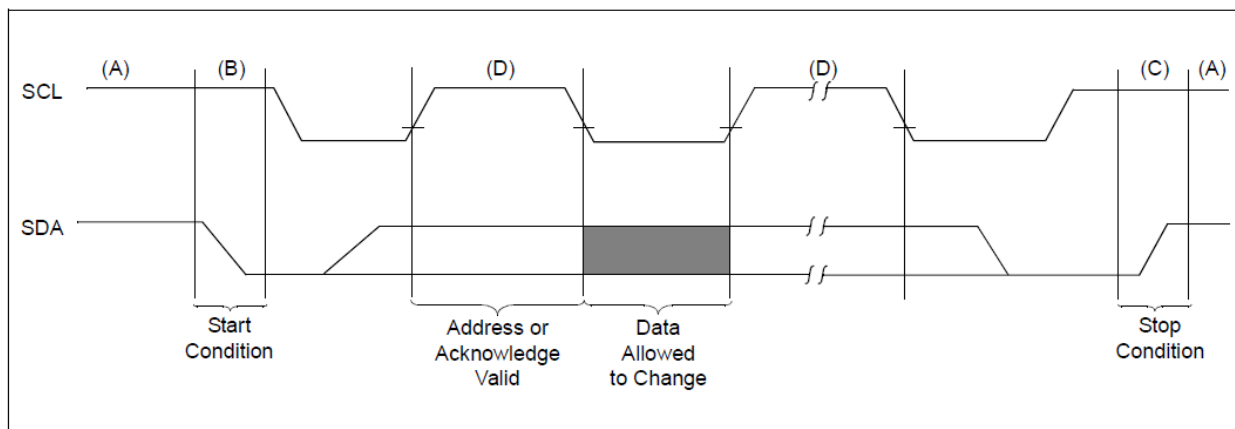




Size and dimensions:

The board is 3401 mills by 2252 mills. The smallest traces are 30 mills.

SMBUS communication to other devices

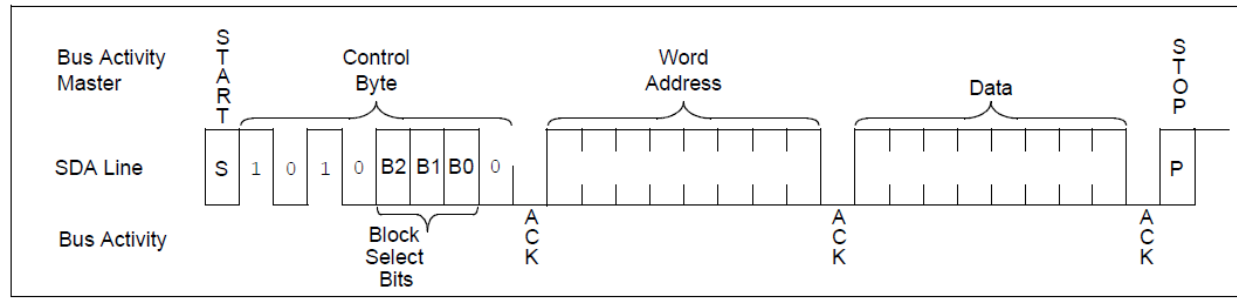


The diagram above shows how the SMBUS sends or receives data. The first rule you will notice is that the SCL must be high in order to send or receive data on the SDAT. A falling edge is a start condition and

a rising edge a stop condition. If you want to change data you need to do so when the SCL is low to avoid getting a start or stop condition.

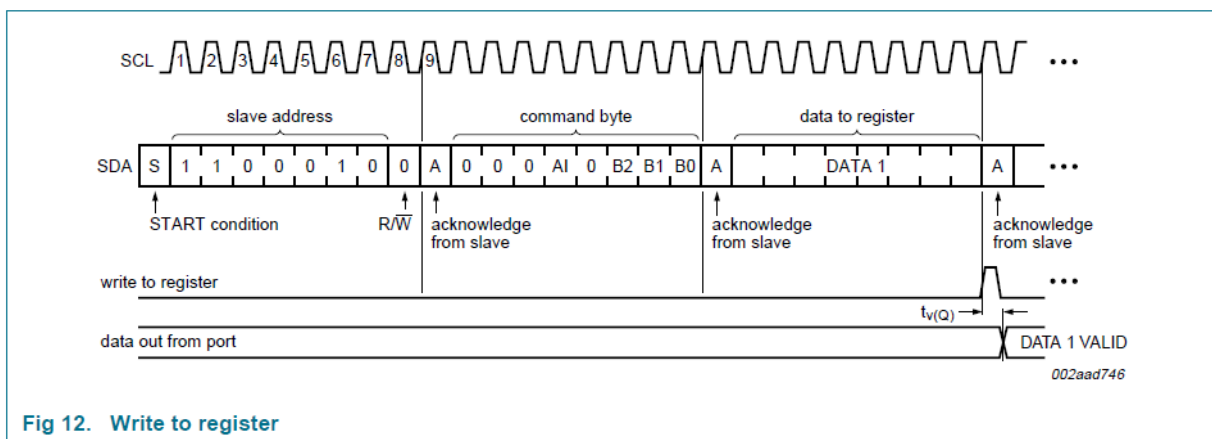
EEPROM

Write to EEPROM



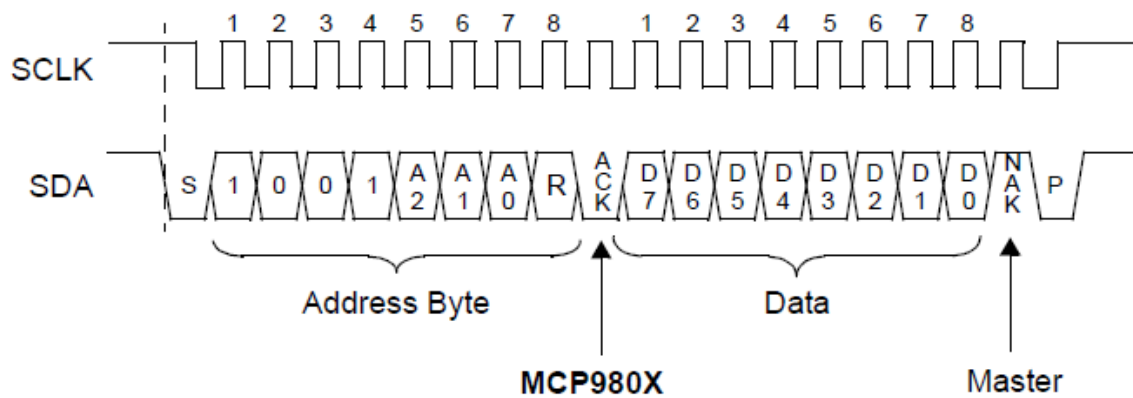
The diagram above shows what is happening on the SDA line when the SMBUS is writing to it. The first bit is the start bit

LED Driver



The first byte is the slave device address and also tells you if you are doing a read or a write (0 for write 1 for read). The second byte is the command byte and is used to decide if you want just LED's on or pulse width modulation. There are 6 different functions and a function is set by B0, B1, and B2. The last byte is the data byte and is used to set the PWM or select which LED's are on.

Temperature Sensor



We read from the temperature sensor the way the diagram above shows. The first byte is the address and the second byte is reading the data.

Fix It's made after first board was made

- Made header able to be solder as a throw hole device instead of surface mount
- To prevent heat loss we put copper X's on our pads instead of solid copper. This was mostly done to the pads that were connected to the ground plane.
- Moved traces and made them wider
- Added some via's